

**In the Claims:**

Please amend the claims as follows:

1. A [[S]]semiconductor laser comprising: an active waveguide [[3]] extending in the longitudinal [(X)], lateral [(Y)] and vertical [(Z)] directions, comprising an active region [(4)], surrounded by a filler material [(5)] and coupled to a distributed reflector [(7, 8)], characterized in that said distributed reflector [(7, 8)] is implemented in said filler material [(9)] along at least one of the lateral sides of the active region [(4)] and essentially parallel to them, in the form of at least a first configuration [(7, 8)] with a photonic band gap along said longitudinal axis [(X)].
2. The [[L]]laser ~~as claimed in~~ of claim 1, characterized in that said first configuration [(7, 8)] extends over one portion at least of the extension [(h)] of the active region [(4)] in the vertical direction [(Z)], and over one portion at least of the extension [(h)] of the filler material [(5)] in the vertical direction [(Z)].
3. The [[L]]laser ~~as claimed in one~~ of claim~~[[s]]~~ 1 ~~or~~ 2, characterized in that said first configuration [(7, 8)] is a first photonic crystal formed by localized etching of the filler material [(5)] in such a manner as to form hollow columns [(9)] there or to leave columns of material remaining there, these columns comprising a periodic grating of diffracting elements with a lattice in the horizontal plane, which lattice has dimensions of roughly the wavelength of laser operation.
4. The [[L]]laser ~~as claimed in~~ of claim 3, characterized in that said columns [(9)] extend essentially parallel to said vertical direction [(Z)] of the active region~~[[ (4)]]~~.
5. The [[L]]laser ~~as claimed in one~~ of claim~~[[s]]~~ 3 ~~or~~ 4, characterized in that said lattice of the grating of the first photonic crystal has the shape of a convex polygon,
6. The [[L]]laser ~~as claimed in~~ of claim 5, characterized in that said polygon is a regular polygon.
7. The [[L]]laser ~~as claimed in one~~ of claim~~[[s]]~~ 1 ~~to~~ 6, characterized in that said first configuration [(7, 8)] is spaced away from the lateral sides of the active region by an essentially constant distance~~[[ (d)]]~~.
8. The [[L]]laser ~~as claimed in one~~ of claim~~[[s]]~~ 1 ~~to~~ 6, characterized in that said first configuration [(7, 8)] is spaced away from the lateral sides of the active region by a distance [(d1, d2)] which varies along the extension [(L)] of said active region [(4)] in the longitudinal direction~~[[ (X)]]~~.
9. The [[L]]laser as claimed in one of claim~~[[s]]~~ 1 ~~to~~ 8, characterized in that said active

waveguide comprises, on at least one of the longitudinal ends of the active region [(4)], a filler material [(5)] in which, at a distance  $\delta L$  from the first configuration [(7, 8)], reflection means [(10)] are formed which are implemented in the form of a second photonic band gap configuration and extending essentially parallel to the extension [(1)] of the active region [(4)] in the lateral direction[(Y)].

10. The [(L)]laser ~~as claimed in~~ of claim 9, characterized in that said second configuration [(10)] extends at least over the entire extension [(h)] of the active region [(4)] in the vertical direction[(Z)].

11. The [(L)]laser ~~as claimed in one of claim[s] 9~~ or 10], characterized in that said second configuration [(10)] extends over the entire extension [(l)] of the active region [(4)] in the lateral direction[(Y)], and over one portion at least of the extension of the filler material [(5)] in the lateral direction[(Y)].

12. The [(L)]laser ~~as claimed in one of claim[s] 9 to 11~~, characterized in that said second configuration [(10)] is a second photonic crystal formed by localized etching of the filler material [(5)] in such a manner as to form hollow columns [(13)] there or to leave columns of material remaining there, these columns comprising a periodic grating of diffracting elements with a lattice in the horizontal plane, which lattice has dimensions of roughly the wavelength of laser operation.

13. The [(L)]laser ~~as claimed in~~ of claim 12, characterized in that said columns [(13)] extend essentially parallel to said vertical direction [(Z)] of the active region [(4)].

14. The [(L)]laser ~~as claimed in one of claim[s] 12 or 13~~, characterized in that said lattice of the grating of the second first photonic crystal has the shape of a convex polygon.

15. The [(L)]laser ~~as claimed in~~ of claim 14, characterized in that said polygon is a regular polygon.

16. The [(L)]laser ~~as claimed in one of claim[s] 9 to 15~~, characterized in that said distance  $\delta L$  is essentially equal to a whole number times half the wavelength of laser operation in the filler material such that the first and second configurations [(7, 8; 10)] define a Fabry-Perot type resonant cavity.